AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A steel wire ~~for cords~~ in a cord having a construction of core and sheath, the steel wire comprising a wire diameter ranging from 0.10mm to 0.40mm obtained by subjecting a high-carbon steel wire material having a carbon content ranging from 0.70% to 0.90% in weight to heat treatment and wire drawing, said steel wire preformed to have a minimum radius of curvature of 10 to 60 times its diameter, a tensile strength TS (N/mm^2) of the steel wire satisfies following formula,

$TS \geq 2250 - 1450 \log D$

wherein D is the diameter of the steel wire in mm and log means common logarithm,

and that repeated torsion value RT (turns/100D) of the steel wire, which is defined as sum of forward twisting and reverse twisting given until a crack is formed on a steel wire in a test wherein a steel wire is subjected to a repetition of forward twisting equivalent to 3 turns per 100D and reverse twisting to the original state with the axis of the steel wire kept straight, satisfies following formula;

$\log RT \geq 2 - 0.001\{TS - (2250 - 1450 \log D)\}$.

2. (Previously Presented) A steel wire according to claim 1, having tensile strength TS
(N/mm^2) satisfying following formula,

$TS \geq 2750 - 1450 \log D$.

5. (Previously Presented) A method of manufacturing a steel wire having a diameter
ranging from 0.10mm to 0.40mm obtained by subjecting a high-carbon steel wire material
having a carbon content ranging from 0.70% to 0.90% in weight to heat treatment and wire
drawing, characterized in;

that tensile strength TS (N/mm^2) of the steel wire satisfies following formula,

$TS \geq 2250 - 1450 \log D$

wherein D is the diameter of the steel wire in mm and log means common logarithm,

and that repeated torsion value RT (turns/100D) of the steel wire, which is defined as sum
of forward twisting and reverse twisting given until a crack is formed on a steel wire in a test
wherein a steel wire is subjected to a repetition of forward twisting equivalent to 3 turns per
100D and reverse twisting to the original state with the axis of the steel wire kept straight,
satisfies following formula,

$\log RT \geq 2 - 0.001 \{TS - (2250 - 1450 \log D)\}$

which comprises a step of drawing a high-carbon steel wire material after heat treatment,

characterized in that the step of drawing is carried out according to following conditions;

① reduction per die is set from (22.67 ε+3)% to 29% for dies at which ε is less than
0.75,

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② reduction per die is set from 20% to 29% for dies at which ε is not less than 0.75 and

not more than 2.25,

③ reduction per die is set from $(-5.56\,\varepsilon +32.5)\%$ to $(-6.22\,\varepsilon +43)\%$ for dies at which ε is

more than 2.25 except for the final die,

④ reduction per die is set from 4% to $(-8.3\,\varepsilon +40.6)\%$ for the final die, and

⑤ ε at the final die is set from 3.0 to 4.3,

wherein ε is drawing strain expressed by a formula $\varepsilon =2\ln(d_0/d)$, d_0 is diameter of the

steel wire material in mm before drawing, d is diameter of the steel wire in mm after passing

through a die, and ln means natural logarithm.

6. (Previously Presented) A method of manufacturing a steel wire according to claim 8,

wherein ε at the final die is set from 3.5 to 4.2.

7. (Currently Amended) A method of manufacturing a steel wire according to ~~clam~~

claim 8, wherein a bending operation with tension is applied to the steel wire drawn through the

final die.

8. (Currently Amended) A method of manufacturing a steel wire comprising; a wire

diameter ranging from 0.10mm to 0.40mm obtained by subjecting a high-carbon steel wire

material having a carbon content ranging from 0.70% to 0.90% in weight to heat treatment and

wire drawing, characterized in;

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a tensile strength TS (N/mm^2) of the steel wire satisfies following formula,

TS$\geq$2250-1450logD

wherein D is the diameter of the steel wire in mm and log means common logarithm,

and that repeated torsion value RT (turns/100D) of the steel wire, which is defined as sum

of forward twisting and reverse twisting given until a crack is formed on a steel wire in a test

wherein a steel wire is subjected to a repetition of forward twisting equivalent to 3 turns per

100D and reverse twisting to the original state with the axis of the steel wire kept straight,

satisfies following formulalogRT$\geq$2-0.001{TS-(2250-1450logD)},

said method comprising the steps of heat treating drawing a high-carbon steel wire

material after heat treatment, wherein the step of drawing is carried out according to following

conditions;

1. reduction per die is set ~~form~~ <u>from</u> (22.67 ε +3)% to 29% for dies at which ε is less

than 0.75,

2. reduction per die is set from 20% to 29% for dies at which ε is not less than 0.75 and

not more than 2.25,

3. reduction per dies is set from (-5.56 ε +32.5)% to (-6.22 ε +43)% for dies at which ε is

more than 2.25 except for the final die,

4. reduction per die is set from 4% to (8.3 ε +40.6)% for the final die, and

5. ε at the final die is set from 3.0 to 4.3,

wherein ε is drawing strain expressed by a formula $\varepsilon = 2\ln(d_0/d)$, d_0 is diameter of the steel wire material in mm before drawing, d is diameter of the steel wire in mm after passing through a die, and ln means natural logarithm.

9. (Currently Amended) A steel wire comprising wire diameter ranging from 0.10mm to 0.40mm obtained by subjecting a high-carbon steel wire material having a carbon content ranging from 0.70% to 0.90% in weight to heat treatment and wire drawing,

the steel wire manufactured by drawing a high-carbon steel wire material after heat treatment, wherein the drawing is carried out according to following condition;

1. reduction per die is set ~~form~~ <u>from</u> (22.67 ε +3)% to 29% for dies at which ε is less than 0.75,

2. reduction per die is set from 20% to 29% for dies at which ε is not less than 0.75 and not more than 2.25,

3. reduction per dies is set from (-5.56 ε +32.5)% to (-6.22 ε +43)% for dies at which ε is more than 2.25 except for the final die,

4. reduction per die is set from 4% to (8.3 ε +40.6)% for the final die, and

5. ε at the final die is set from 3.0 to 4.3,

wherein ε is drawing strain expressed by a formula $\varepsilon = 2\ln(d_0/d)$, d_0 is diameter of the steel wire material in mm before drawing, d is diameter of the steel wire in mm after passing through a die, and ln means natural logarithm and the tensile strength TS (N/mm^2) of the steel wire satisfies following formula,

$TS \geq 2250-1450\log D$

wherein D is the diameter of the steel wire in mm and log means common logarithm,

and that repeated torsion value RT (turns/100D) of the steel wire, which is defined as sum

of forward twisting and reverse twisting given until a crack is formed on a steel wire in a test

wherein a steel wire is subjected to a repetition of forward twisting equivalent to 3 turns per

100D and reverse twisting to the original state with the axis of the steel wire kept straight,

satisfies following formula,

$\log RT \geq 2-0.001 \ \{TS-(2250-1450\log D)\}$

10. (Previously Presented) A steel wire according to claim 9, having tensile strength TS
(N/mm^2) satisfying following formula.

$TS \geq 2750-1450\log D$.

11. (Previously Presented) A steel wire according to claim 10, having repeated torsion

value RT not less than 60% of RT of the same steel wire the surface layer of which has been

removed by the amount equivalent to 10% of total volume.

12. (Previously Presented) A steel wire according to claim 9, having breaking torsion

value, which is defined as an amount of twisting to one direction subjected to a steel wire until

the steel wire is broken, not less than 20 turns per 100D when the steel wire has been given such

a preforming that the steel wire has minimum radius of curvature of 10 to 60 times its diameter

and embedded in rubber and taken out from the rubber after vulcanization.